



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,345	01/11/2002	Yasuaki Tanaka	991482A	6310

38834 7590 11/22/2004

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER

KIM, PETER B

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 11/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

262

Office Action Summary

Application No.

10/042,345

Applicant(s)

TANAKA, YASUAKI

Examiner

Peter B. Kim

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41,42,46,52-55,59,75-77,85 and 90-93 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 41,42,46,52-55,59,75-77,85 and 90-93 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/469,229.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Oct. 12, 2004 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 41, 42, 46, 52-55, 59, 75-77, 85, and 90-93 are rejected under 35 U.S.C. 102(e) as being anticipated by Takahashi (5,892,573).

Takahashi discloses a method for scanning exposure of a pattern formed on a mask (R) onto a substrate (W) through a projection optical system (10). A light quantity of a portion of exposure light from an illumination optical system is detected using a first light detecting means. A second light receiving means then detects the light quantity of exposure light passed through a transmitting portion of a movable stage. The first light receiving means is detected on a plane conjugate with the reticle, while the second light receiving means is conjugate with the wafer.

The sensitivity of the first light detecting means is then corrected on the basis of detected values of first and second light receiving means, δ corresponds to the transmissivity change in the illumination optical system and is stored in the calculating means as the sensitivity coefficient for the second step (col. 12, lines 1-17). Takahashi teaches obtaining function of an attenuation factor by measuring transmittance of the projection optical system at different intervals of the pulse emission (col. 8, lines 1-44 and col. 9, line 27-col. 11, line 50). Thus, in obtaining the attenuation function at various intervals suggest that the attenuation factor recovery of the optical system is inherently included in Takahashi's function. The exposure process may be performed while scanning the reticle and the wafer. The exposure light comprises excimer laser light, such as deep ultraviolet light (col. 1, lines 26-27). (see col. 15, line 11 – col. 16, line 63). Col. 11, lines 58-67 teach if the area of the transmissive portion of the circuit pattern of the mask is small, such as a contact hole, the transmissivity change of the projection optical system is small. For the sensitivity correction it may be sufficient to monitor only transmissivity variation of the illumination optical system. The exposure process may also comprise detecting a first ratio between the values of the first and second light receiving means in a state in which the reticle is not disposed in the path of the exposure light (interruption), detecting a second ratio between the detected values of the first and second light receiving means in a state when the reticle is disposed in the path of the exposure light and detecting a third ratio between the detected values of the first and second light receiving means in a state after at least one exposure process. The reticle is then disposed in the path of the exposure light and the sensitivity of the first light receiving means is corrected on the basis of the first second and third ratios. As explained above, the fluctuation of attenuation factor of the projection optical system while the mask is

Art Unit: 2851

moving relative to the energy beam is obtained. Takahashi discloses detecting the energy beam between the light source and the mask (12) and detecting the energy after it has passed through the projection optical system (13) and obtaining the function use the results of both detections (col. 8, lines 1-63).

Response to Arguments

Applicant's arguments filed Oct. 12, 2004 have been fully considered but they are not persuasive. Applicant argues that the cited reference does not teach a function of an attenuation factor recovery of the projection optical system; however, the attenuation factor recovery of the projection optical system is a part of the calculation in determining exposure quantity as taught by Takahashi (col. 8, lines 1-44 and col. 9, line 27-col. 11, line 50).

Response to Amendment

The status of claim 93 is indicated as "New" when it seems to have been amended.

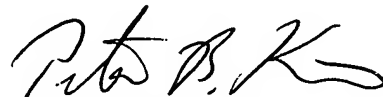
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter B. Kim whose telephone number is (571) 272-2120. The examiner can normally be reached on 8:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2851

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Peter B. Kim". The signature is stylized with a large, looped "P" and a long, sweeping "K".

Peter B. Kim
Primary Examiner
Art Unit 2851

November 16, 2004